



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,731	09/04/2003	Yoshiaki Tanaka	10844-34US (203067D-1)	4770

570 7590 03/28/2006

AKIN GUMP STRAUSS HAUER & FELD L.L.P.
ONE COMMERCE SQUARE
2005 MARKET STREET, SUITE 2200
PHILADELPHIA, PA 19103

EXAMINER

ALEXANDER, MICHAEL P

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,731

Applicant(s)

TANAKA, YOSHIKI

Examiner

Michael P. Alexander

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 and 23-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 15-22 and 51-58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 09/04/03, 02/07/05.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim(s) 1-58 is/are pending.

Election/Restrictions

This application contains claims directed to the following patentably distinct species: (1) thin type fuse, (2) cylindrical type fuse, (3) case type fuse, (4) radial type fuse and (5) substrate type fuse. The species are independent or distinct because the differing fuse structures amount to a patentable difference.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-10 and 15-22 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a).

During a telephone conversation with Sandy Katz on 19 January 2006 a provisional election was made with traverse to prosecute the invention of species 2,

Art Unit: 1742

claims 51-58. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-14 and 23-50 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10, 15-22 and 51-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1-2, the claims do not specify whether the percent limitations are in weight percent, mass percent, atomic percent or some other unit of measurement. Claims 3-10, 15-22 and 51-58 are indefinite in that they depend from claims 1-2.

Regarding claims 3-10, 15-22 and 51-58, the claims are indefinite because of the word "type" in the claims. See MPEP 2173.05(b) E.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kliever (US 3,280,629).

Regarding claims 1, Kliewer teaches (col. 1 lines 1-53, col. 4 lines 1-8) a material having an alloy composition in which In is 21 wt%, Sn is 12 wt%, and balance Bi, and in which the composition does not fall within the excluded ranges. The Examiner asserts that the limitation "for a thermal fuse element" is merely a statement of intended use or purpose and is given no patentable weight. See MPEP 2111.02 II.

Regarding claim 3, the Examiner asserts that the indicator rod of Kliewer would be an "alloy type thermal fuse element" because it is an element that fuses due to changing temperature conditions.

Regarding claim 5, the Examiner asserts that the alloys of Kliewer would inevitably have inevitable impurities.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437.

Regarding claims 1-2, JP 63-262438 teaches (see Example 17), JP 63-266035 teaches (see Example 18), JP63-266034 teaches (see Example 5) and JP 63-270437 teaches (see Example 5) fuses having compositions falling within the claimed ranges. The Examiner asserts that the limitation "for a thermal fuse element" is merely a statement of intended use or purpose and is given no patentable weight. See MPEP 2111.02 II.

Regarding claims 3-4, the Examiner notes that the specification does not define "alloy type thermal fuse". Therefore the Examiner asserts that the fuses of the cited prior art are formed from alloys and would inherently be sensitive to temperature and would therefore inherently qualify as alloy type thermal fuses.

Art Unit: 1742

Regarding claims 5-6, the Examiner asserts that the alloys of the cited prior art would inevitably have inevitable impurities.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(a) as being anticipated by Takemoto (JP 2003034831).

Regarding claims 1, 3 and 5, Takemoto teaches (abstract and alloys B2, H6 and H7 on page 4) an alloy type thermal fuse each having compositions within the claimed ranges and not having compositions within the excluded ranges. Additionally, the Examiner asserts that the composition would inherently include inevitable impurities.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437 as applied to claims 3-6 above, and further in view of Saruwatari (JP11-40025-A) and JP 11306940A.

Regarding claims 7-10, the previously cited references do not teach that the fuse elements would be connected between lead conductors or that at least a portion of each lead conductor is covered with a Sn or Ag film.

With respect to the limitation that fuse elements be connected between lead conductors in claims 7-10, Saruwatari teaches (0002) providing a fuse element having a similar composition to that of the previously cited references and connecting the fuse element between a pair of lead wires in order to form the thermal fuse. It would have been obvious to one of ordinary skill in the art to modify the alloys of any one of the previously cited references by connecting the fuse element between a pair of lead wires in order to form the thermal fuse as taught by Saruwatari.

With respect to the limitation that at least a portion of each lead conductor is covered with a Sn or Ag film in claims 7-10, JP 11306940 A teaches (abstract) applying a Sn or Ag film to the surface of lead conductors in order to improve the bonding strength of the lead conductors. It would have been obvious to one of ordinary skill in the art to modify the method of the previously cited references in view of Saruwatari by applying a Sn or Ag film to the surface of the lead conductors in order to improve the bonding strength of the lead conductors as taught by JP 11306940 A.

Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437 as applied to claims 3-6 above, and further in view of Cole (GB 2028608 A).

Regarding claims 15-18, the aforementioned mentioned references do not specify providing a heating element for fusing off said fuse element. However, Cole

Art Unit: 1742

teaches (abstract) providing a resistor to blow a thermal fuse in order to terminate heating in a heating circuit for an electric blanket. It would have been obvious to one of ordinary skill in the art to modify the previously cited references by providing a resistor to blow a thermal fuse in order to terminate heating in a heating circuit for an electric blanket as taught by Cole.

Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437 in view of Saruwatari (JP11-40025-A) and JP 11306940A as applied to claims 7-10 above, and further in view of Cole (GB 2028608 A).

Regarding claims 19-22, see the rejection of claims 15-18 above.

Claims 51-54 rejected under 35 U.S.C. 103(a) as being unpatentable over any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437 as applied to claims 3-6 above, and further in view of Saruwatari (JP11-40025-A) and Ishioka (JP 403110732A).

Regarding claims 51-54, the previously cited references do not specify that lead conductors are bonded to ends of the fuse element, respectively, a flux is applied to said fuse element, said flux-applied fused element is passed through a cylindrical case, and gaps between ends of the ceramic tubing and the lead conductors are sealingly closed and do not specify that the ends of the lead conductors have a disk-like shape, and ends of the fuse element are bonded to front faces of the disks

With respect to the limitations that lead conductors are bonded to ends of the fuse element, respectively, a flux is applied to said fuse element, said flux-applied fused

Art Unit: 1742

element is passed through a cylindrical case, and gaps between ends of the ceramic tubing and the lead conductors are sealingly closed in claims 51-54, Saruwatari teaches (0010) in a method of forming an alloy type thermal fuse using a substantially similar composition, that lead conductors are bonded to ends of the fuse element, respectively, a flux is applied to said fuse element, said flux-applied fused element is passed through a ceramic tube (i.e. cylindrical case), and gaps between ends of the ceramic tubing and the lead conductors are sealingly closed. It would have been obvious to one of ordinary skill in the art to combine the fuse of the previously cited references with Saruwatari in order to form an cylindrical case type thermal fuse.

With respect to the limitations that the lead conductors have a disk-like shape and ends of the fuse element are bonded to front faces of the disks in claims 51-57, Ishioka teaches (abstract) providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the disks in order to prevent flux from adhering to the ends of the cylindrical case and to achieve quick separation when the fuse is activated. It would have been obvious to one of ordinary skill in the art to modify the method the previously cited references by providing lead conductors with a disk-like shape at the ends of the lead conductors and bonding the fuse elements to the front faces of the disks in order to prevent flux from adhering to the ends of the cylindrical case and to achieve quick separation when the fuse is activated as taught by Ishioka.

Claims 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of JP 63-262438, JP 63-266035, JP63-266034 and JP 63-270437 in view of

Art Unit: 1742

Saruwatari (JP11-40025-A) and JP 11306940A as applied to claims 7-10 above, and further in view of Ishioka (JP 403110732A).

Regarding claims 55-58, see the rejection of claims 51-54 above.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,819,215. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed range of \ln (15% or larger and smaller than 37%) and the prior art range (37 to 43%) are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05 I, which states a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not

Art Unit: 1742

overlap but are close enough that one skilled in the art would have expected them to have the same properties.

Claims 1, 3 and 5 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,911,892. Although the conflicting claims are not identical, they are not patentably distinct from each other because claimed range of \ln (15% or larger and smaller than 37%) and the prior art range (37 to 43%) are close enough that one skilled in the art would have expected them to have the same properties. See MPEP 2144.05 I, which states a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties.

Claims 1-10, 15-22 and 51-58 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 31 and 55 of copending Application No. 10/656,561. Although the conflicting claims are not identical, they are not patentably distinct from each other because the composition of the prior art overlaps with the composition of the claimed invention, which is prima facie evidence of obviousness. See MPEP 2144.05 I.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Art Unit: 1742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Alexander whose telephone number is 571-272-8558. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mpa
mpa

ROY KING *R*
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700